

Appl. N . 09/324,149
Amdt. dated June 18, 2004
Reply to Office Action of October 21, 2003

PATENT

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

Claim 1. (currently amended) A multicolor display apparatus, comprising:

an array of semiconductor nanocrystals ~~arranged to form~~ forming a plurality of pixels
pixel array of different colors, wherein the sizes of the nanocrystals determine the colors;

a pixel addressing system operatively associated with the nanocrystal array for selectively
optically exciting the nanocrystals to produce a luminescent color pattern of pixels.

Claim 2. (original) The apparatus of Claim 1 wherein the pixel addressing system includes a
backlight source.

Claim 3. (original) The apparatus of Claim 2 wherein the backlight source is a source of
ultraviolet light or blue light.

Claim 4. (original) The apparatus of Claim 1 wherein the pixel addressing system comprises a
multielement backlight source, wherein each source element is independently operable.

Claim 5. (original) The apparatus of Claim 4 wherein the source elements are LEDs or
semiconductor lasers.

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Claim 6. (original) The apparatus of Claim 5 wherein the source elements are sources of ultraviolet light or blue light.

Claim 7. (currently amended) The apparatus of Claim 1 wherein the pixel addressing system comprises:

a backlight source; and

a liquid crystal modulator positioned between the backlight source and the nanocrystal array.

Claim 8. (previously presented) The apparatus of Claim 7 further comprising an analyzer between the nanocrystal array and liquid crystal modulator.

Claim 9. (original) The apparatus of Claim 7 further comprising an analyzer positioned between the backlight source and liquid crystal modulator.

Claim 10. (original) The apparatus of Claim 7 wherein the backlight source is a source of ultraviolet light or blue light.

Claim 11. (original) The apparatus of Claim 7 wherein the backlight source is an end pumped slab laser.

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Claim 12. (original) The apparatus of Claim 1 wherein the pixel addressing system comprises a modulated laser whose output beam is raster scanned over the nanocrystal array.

Claim 13. (original) The apparatus of Claim 12 wherein the laser is a source of ultraviolet light or blue light.

Claim 14. (original) The apparatus of Claim 1 wherein the nanocrystal array is formed of nanocrystals which each emit light of one of the three primary colors red, green and blue, arranged to form red, green, or blue pixels respectively.

Claim 15. (original) The apparatus of Claim 1 including nanocrystals which emit light at other than the primary colors red, green and blue.

Claim 16. (original) The apparatus of Claim 1 further comprising a long-pass filter placed over the nanocrystal array.

Claim 17. (original) The apparatus of Claim 2 wherein the nanocrystal array is formed on a transparent plate and the transparent plate is positioned between the nanocrystal array and the backlight source.

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Claim 18. (original) The apparatus of Claim 2 wherein the nanocrystal array is formed on a transparent plate and the nanocrystal array is positioned between the transparent plate and the backlight source.

Claim 19. (original) The apparatus of claim 2 wherein the nanocrystal array is formed on the backlight source.

Claim 20. (original) The apparatus of Claim 2 wherein the backlight source is a blue light source and blue pixels are formed by open spaces in the nanocrystal array.

Claim 21. (previously presented) The apparatus of Claim 1 wherein the pixel addressing system selectively optically excites the nanocrystals with light of substantially a single wavelength.

Claim 22. (previously presented) The apparatus of Claim 2 wherein the backlight source is a source which produces light of substantially a single wavelength.

Claim 23. (previously presented) The apparatus of Claim 7 wherein the backlight source is a source which produces light of substantially a single wavelength.

Claim 24. (new) A multicolor display apparatus comprising:

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a nanocrystal array forming an array of pixels, wherein the array of pixels comprises a first discrete pixel comprising first nanocrystal particles of a first size and a second discrete pixel comprising second nanocrystal particles of a second size; and

a pixel addressing system operatively associated with the array of pixels, wherein the pixel addressing system is adapted to excite the first nanocrystal particles in the first discrete pixel using light comprising a wavelength to cause the first pixel to produce a first color and to excite the second nanocrystal particles in the second discrete pixel using light of the same wavelength to cause the second discrete pixel to produce a second color.

Claim 25. (new) The apparatus of Claim 24 wherein the pixel addressing system includes a light source that produces only one wavelength of light.

Claim 26. (new) The apparatus of Claim 24 wherein the pixel addressing system includes a backlight source and a liquid crystal modulator.

Claim 27. (new) The apparatus of Claim 24 wherein the light is blue light.

Claim 28. (new) The apparatus of Claim 24 further comprising a long pass filter in operative association with the array of pixels.